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UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH SERVICE  
Bureau of Animal Industry

NEW BREEDS OF MEAT-TYPE HOGS DEVELOPED BY RESEARCH

By John H. Zeller, Animal Husbandman

Six new breeds of meat-type hogs have been developed from crossbred foundations of two or more breeds. The new breeds are:

|            |       |   |
|------------|-------|---|
| Minnesota  | No. 1 | (Landrace-Tamworth)                         |
| Minnesota  | No. 2 | (Yorkshire-Poland China)                    |
| Montana    | No. 1 | (Landrace-Hampshire)                        |
| Beltsville | No. 1 | (Landrace-Poland China)                     |
| Beltsville | No. 2 | (Danish Yorkshire-Duroc-Landrace-Hampshire) |
| Maryland   | No. 1 | (Landrace-Berkshire)                        |

Breed Descriptions

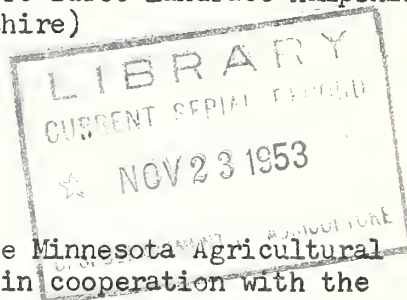
MINNESOTA NO. 1

The Minnesota No. 1 hog was developed by the Minnesota Agricultural Experiment Station, at Grand Rapids, Minnesota, in cooperation with the Regional Swine Breeding Laboratory of the U. S. Department of Agriculture.

Research on the Minnesota No. 1 hog was begun in 1936 with a cross-bred foundation of the Danish Landrace and Tamworth. The initial crosses were followed by a system of mild inbreeding to fix definite characteristics. Parents for each generation were selected on their record, based on fertility, survival of pigs, growth rate, economy of gain, and body conformation. The breed traces to matings involving 14 animals, namely 2 Danish Landrace boars, 8 Tamworth females, and 4 Danish Landrace females. However, only one Landrace boar, one Landrace sow and four Tamworth sows have become actual contributors. The breed approximates 48 percent Landrace and 52 percent Tamworth blood.

The Minnesota No. 1 breed is predominately red in color, with occasional small black spots. The breed is long-bodied, short-legged, with relatively fine, but strong bones, a full ham, light shoulders, and a relatively straight back. It has a long face, exceptionally trim jowls and fairly erect ears.

On August 24, 1946, farmers who had been using stock from the Minnesota herd at Grand Rapids, Minn. met with station representatives and formed the Inbred Livestock Registry Association. They accepted the strain and named it a breed - Minnesota No. 1.



## MINNESOTA NO. 2

The Minnesota No. 2 hog was developed by the Minnesota Agricultural Experiment Station, in cooperation with the Regional Swine Breeding Laboratory of the U. S. Department of Agriculture. The early breeding work in the development of this inbred line of hogs began in 1941 at the Minnesota Northwest Experiment Station, Crookston, Minnesota. In 1943, a second herd was started at the Minnesota Northeast Experiment Station at Duluth, Minnesota. In 1948, herds from the two stations were combined into the Minnesota No. 2.

The Minnesota No. 2 hog was begun in 1941 by mating an Inbred Canadian Yorkshire boar with 13 Inbred Poland China gilts. Animals of the first and second generations were intermated, followed by backcrossing, to obtain desirable combinations of characters. The breed traces to a foundation stock of five Poland Chinas and one Yorkshire. The breed contains 40 percent Yorkshire and 60 percent Poland China blood.

The color is black and white. The body is long, the sides produce good quality bacon, uniform in thickness, loins that are well muscled, and hams that are full and deep. The snout is shorter and the legs longer than the Minnesota No. 1. The ears are of medium size with an erect carriage.

The performance of the breed is good. It crosses well with hogs of other breeds. The carcasses yield a high percent of the five primal cuts, with an average backfat thickness of 1 1/2 inches. In 1948 the breed was recognized by the Inbred Livestock Registry Association, University Farm, St. Paul 1, Minnesota, and called the Minnesota No. 2.

## MONTANA NO. 1 OR HAMPRACE

A new breed of hogs originally known as the Black Hamprace has been established through a cooperative agreement between the Montana Agricultural Experiment Station and the Bureau of Animal Industry, U. S. Department of Agriculture. The new breed was developed from crosses made in 1936 and the percentage of blood is now approximately 55 percent Landrace and 45 percent Hampshire. The breed is about 32 percent inbred. The Hamprace is solid black in color. The work was done at the U. S. Range Livestock Experiment Station, Miles City, Montana.

Production records based on the 9-year period from 1939 to 1947 show that the Hamprace averages about 10.6 pigs per litter at birth, 8.1 pigs per litter at weaning, and 248.4 pounds in weight of litter at 56 days. The average daily gain for groups of pigs fed from weaning to a market weight of about 225 pounds has ranged from 1.13 to 1.69 pounds, while feed requirements per 100 pounds of gain in weight has varied from 310 to 444 pounds. In 1948 the Hamprace was admitted to the Inbred Livestock Registry Association with headquarters at University Farm, St. Paul 1, Minnesota. This association renamed the breed the Montana No. 1.

### BELTSVILLE NO. 1

In 1951, the Inbred Landrace-Poland China line developed by the Bureau of Animal Industry at the Agricultural Research Center, Beltsville, Maryland, was admitted to the Inbred Livestock Registry Association, University Farm, St. Paul 1, Minn., as the Beltsville No. 1 breed.

The new breed was developed from crosses made in 1934 and traces to 13 animals (7 boars and 6 sows) of the Danish Landrace breed and 3 Poland China boars. It carries approximately 75 percent Landrace and 25 percent Poland China blood and is about 35 percent inbred.

The color is black with white spots. The amount of white varies from 10 to 40 percent and is distributed rather uniformly over the body. The hog is intermediate in type, with body conformation similar to that of the Landrace. One of the distinguishing characteristics is the long body with little arch of back, a moderate depth of body with a good straight underline, smooth sides, and medium length of legs. It has a moderately wide back, is well muscled, and carries less fat than most hogs. The hams are plump and well muscled to the hock. The head is fairly long and narrow with a trim, light jowl. The ears are drooping and moderately large but do not interfere with vision. The shoulders are smooth and well fleshed. The bone is rather small. The udders are well developed with 12 or more teats. Yearling boars in breeding condition vary in weight from 400 to 600 pounds and yearling sows from 350 to 500 pounds.

Production records based on the 4-year period from 1947 to 1950 show that the Beltsville No. 1 averages 9 pigs per litter at birth and 6 pigs per litter at weaning. Pigs fed under record-of-performance conditions during the same period averaged 1.45 pounds in daily gain from weaning to a market weight of about 225 pounds, and feed requirements per 100 pounds of gain in weight averaged 333 pounds. At slaughter, the 5 preferred cuts -- trimmed hams, loins, bacons, picnic shoulders, and shoulder butts average 49.5 percent of the hogs' weight at slaughter. The hogs dress 80 percent, and the average thickness of back fat is 1.58 inches on animals averaging 212 pounds in live weight at slaughter.

### BELTSVILLE NO. 2

In 1952, the Inbred Danish Yorkshire-Duroc-Landrace-Hampshire line developed by the Animal Husbandry Division, Bureau of Animal Industry, at the Agricultural Research Center, Beltsville, Maryland, was admitted to the Inbred Livestock Registry Association, University Farm, St. Paul 1, Minnesota, and named the Beltsville No. 2 breed.



The line was started in 1940 with two litters from matings between a pair of Danish Yorkshire-Duroc individuals and a pair of Landrace-Hampshire individuals. The Danish Yorkshire - Durocs, a boar and sow, came from the second and first generations, respectively, of an inbred line established at Beltsville in 1935 from a Danish Yorkshire x Duroc cross. The Landrace-Hampshires were half-sibs and came from the second generation of a line established at Miles City, Montana in 1937 by crossing representatives of the Danish Landrace breed with solid black Hampshires. One boar and two gilts from the 1940 litters were used in various combinations with a purebred Yorkshire boar and later generation individuals of the Danish Yorkshire - Duroc line. The "grading up" process was continued until 1946, except that only Danish Yorkshire - Durocs were used. In that year, the line was closed to outside blood, all replacements being made from within the line. The line has since been maintained by using three or four boars on 10 to 16 sows each season. By 1951, the line was in the 10th generation following the original Yorkshire-Duroc x Landrace-Hampshire matings. The line as now constituted traces to four boars and two sows of the Danish Yorkshire breed, two purebred Duroc boars, two Danish Landrace sows and two purebred Black Hampshire boars. The pigs carry approximately 58 percent Danish Yorkshire, 32 percent Duroc, 5 percent Landrace and 5 percent Hampshire blood. The average inbreeding of the litters in 1951 was 35 percent, which is slightly less than that from two generations of full brother and sister matings.

The color is solid red with a white underline, although black spotting is occasionally found on some pigs. The ears are for the most part erect and fairly short. The head is intermediate in length with a moderately trim jowl. The hog is intermediate in type. It has approximately the same length of body as the Yorkshire, but is more compact than the Landrace. The back is of medium width and only slightly arched. The shoulders are smooth and well muscled, the sides moderately deep, with a good straight underline and well muscled flanks. The hams are moderately well rounded. The legs are of medium length.

During the four year period from 1947 to 1950, litters farrowed at Beltsville have averaged 9 pigs at birth and 5.8 pigs at weaning with an average weaning weight of 29 pounds per pig. Pigs fed under record-of-performance conditions during the same period have averaged 1.46 pounds daily gain from weaning at 56 days to market weight of 225 pounds. The amount of feed required per 100 pounds live weight gain when fed in dry lot was 342 pounds.

Carcass data were obtained on 72 hogs of this strain. The live weight of the hogs at slaughter averaged 213.1 pounds. The average thickness of five back fat measurements was 1.68 inches. The hogs had a cold dressing percent of 79.3. The carcasses yielded 48.3 percent of the five trimmed primal cuts, namely hams, loins, bacons, picnic shoulders, and shoulder butts, based on the live weight of the hogs at slaughter.

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The color is black with white spots. The amount of white varies from 10 to 40 percent and is distributed rather uniformly over the body. The hog is intermediate in type, with body conformation similar to that of the Landrace. One of the distinguishing characteristics is the long body with little arch of back, a moderate depth of body with a good straight underline, smooth sides, and medium length of legs. It has a moderately wide back, is well muscled, and carries less fat than most hogs. The hams are plump and well muscled to the hock. The head is fairly long and narrow with a trim, light jowl. The ears are drooping and moderately large but do not interfere with vision. The shoulders are smooth and well fleshed. The bone is rather small. The udders are well developed with 12 or more teats. Yearling boars in breeding condition vary in weight from 400 to 600 pounds and yearling sows from 350 to 500 pounds.

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### BELTSVILLE NO. 2

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The line was started in 1940 with two litters from matings between a pair of Danish Yorkshire-Duroc individuals and a pair of Landrace-Hampshire individuals. The Danish Yorkshire - Durocs, a boar and sow, came from the second and first generations, respectively, of an inbred line established at Beltsville in 1935 from a Danish Yorkshire x Duroc cross. The Landrace-Hampshires were half-sibs and came from the second generation of a line established at Miles City, Montana in 1937 by crossing representatives of the Danish Landrace breed with solid black Hampshires. One boar and two gilts from the 1940 litters were used in various combinations with a purebred Yorkshire boar and later generation individuals of the Danish Yorkshire - Duroc line. The "grading up" process was continued until 1946, except that only Danish Yorkshire - Durocs were used. In that year, the line was closed to outside blood, all replacements being made from within the line. The line has since been maintained by using three or four boars on 10 to 16 sows each season. By 1951, the line was in the 10th generation following the original Yorkshire-Duroc x Landrace-Hampshire matings. The line as now constituted traces to four boars and two sows of the Danish Yorkshire breed, two purebred Duroc boars, two Danish Landrace sows and two purebred Black Hampshire boars. The pigs carry approximately 58 percent Danish Yorkshire, 32 percent Duroc, 5 percent Landrace and 5 percent Hampshire blood. The average inbreeding of the litters in 1951 was 35 percent, which is slightly less than that from two generations of full brother and sister matings.

The color is solid red with a white underline, although black spotting is occasionally found on some pigs. The ears are for the most part erect and fairly short. The head is intermediate in length with a moderately trim jowl. The hog is intermediate in type. It has approximately the same length of body as the Yorkshire, but is more compact than the Landrace. The back is of medium width and only slightly arched. The shoulders are smooth and well muscled, the sides moderately deep, with a good straight underline and well muscled flanks. The hams are moderately well rounded. The legs are of medium length.

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MARYLAND NO. 1

The Landrace-Berkshire line of swine which was developed cooperatively by the Bureau of Animal Industry, U. S. Department of Agriculture, and the Maryland Agricultural Experiment Station at Blakeford Farms, Queenstown, Maryland, was admitted to the Inbred Livestock Registry Association, University Farm, St. Paul 1, Minnesota, in 1951 as the Maryland No. 1 breed.

The history of the development of this breed is unique in that all the resources in land, equipment, breeding animals, and the necessary funds were placed at the disposal of the cooperating agencies by a private organization. The line was established in 1941 and carries approximately 62 percent Landrace and 38 percent Berkshire blood. By 1950 the line traced to 3 Landrace boars and 7 Berkshires (1 boar and 6 sows).

Landrace-Berkshire hogs are black and white spotted. They are intermediate in conformation between the Landrace and Berkshire. The back is slightly arched and of medium width. The head is moderately long. The jaw is neat but somewhat heavier than that of the Landrace. The ears are erect or slightly drooping and intermediate in size. The shoulders are laid in well and are heavily muscled, the sides are long, deep, and smooth, and well muscled in the flanks. The hams are well rounded and plump, and the legs are of medium length. Slaughter data show that, on the average, the hogs dress 79 percent, and the weight of the preferred trimmed cuts is about 50 percent of the live weight at slaughter.

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